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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WALTERS JR, ROBERT S	
ART UNIT	PAPER NUMBER
1792	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,867	BURCKHARDT, URS	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *17-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-32 are pending. Claims 17-32 are withdrawn. Claims 1-16 are presented for examination.

Election/Restrictions

Election by Telephone

During a telephone conversation on 6/4/2009 a provisional election was made with traverse to prosecute the invention of the aldiminoalkylsilane and its method of production, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Restriction

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-16, drawn to an aldiminoalkylsilane and its method of production.

Group II, claim(s) s 17-19, drawn to a method of use of the aldiminoalkylsilane.

Group III, claim(s) 20-21, drawn to a hydrolysis process.

Group IV, claim(s) 22-28, drawn to a moisture-curing composition.

Group V, claim(s) 29-30, drawn to a method of coating the moisture-curing composition.

Group VI, claim(s) 31, drawn to an adhesion promoter composition.

Group VII, claim(s) 32, drawn to a method of coating the adhesion promoter composition.

The inventions listed as Groups I-VII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Unity exists only when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding claimed special technical features. In this case, the technical feature shared by each invention is the aldiminoalkylsilane of pending claim 1.

The question of unity of invention has been reconsidered retroactively by the examiner in view of the search performed; a review of Okuhira et al. (EP 0985693) makes clear that the inventions of the groups I-VII lack the same or corresponding special technical feature because the cited reference appears to demonstrate that the claimed technical feature does not define a contribution which each of the inventions, considered as a whole, makes over the prior art. This is because Okuhira teaches the technical feature of the aldiminoalkylsilane of pending claim 1 (see Formula 2, Formula 4 and Formula 13). Accordingly, the prior art of the record supports restriction of the claimed subject matter to the groups as mentioned immediately above.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-4, 7, 8, 10, 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-4, 7, 8, 10, 11 and 13, the phrases "especially", "preferably" and "in particular" render the claims indefinite because it is unclear whether the limitations following the phrases are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Okuhira et al. (EP 0985693).

Regarding claims 1-5, 9 and 13, Okuhira teaches aldiminoalkylsilanes (see Formula 13, page 13) prepared from the reaction of 3-aminopropyltrimethoxysilane (see Formula 5, page 10), or 3-aminopropyldimethoxymethylsilane (see Formula 9, page 10) with an aldehyde of Formula II (see Formula 2, page 8), wherein both Y^1 and Y^2 can be methyl (see page 8, lines 1-16). Okuhira teaches all the critical limitations of the claims, therefore Okuhira clearly anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuhira.

Regarding claims 14 and 15, Okuhira teaches all the limitations of claim 1, including reacting an aminoalkylsilane of formula I with an aldehyde of formula II (see above), wherein the aldehyde is employed stoichiometrically to the amine groups of the aminoalkylsilane (0078). Okuhira further teaches a reaction of an aliphatic amine with a ketone to provide a ketoimine, wherein the water formed in the reaction is substantially removed from the reaction mixture azeotropically (0137). Okuhira fails to explicitly teach an embodiment where the water is removed completely from the reaction mixture of an aminoalkylsilane of formula I and an

aldehyde of formula II. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Okuhira's process by substantially completely removing water generated in the reaction mixture. One would have been motivated to make this modification as based on Le Chatelier's principle of dynamic equilibrium, the removal of the generated water from the reaction mixture would aid in driving the reaction to completion.

4. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuhira in view of Merger et al. (U.S. Pat. No. 4853454).

I. Regarding claim 6, Okuhira teaches the preparation of aldiminoalkylsilanes by the reaction of aminoalkylsilanes as defined in claim 1 (see above) for use in a moisture curable coating composition (abstract), but fail to teach aldiminoalkylsilanes prepared by the reaction of those aminoalkylsilanes with the aldehydes defined by claim 6. However, Merger teaches a process for preparing polyaldimines by reaction of primary amines with aldehydes (column 7, lines 6-30) having the formula as is delineated in claim 6 (column 7, lines 25-30 and column 3, line 63-column 4, line 10) for application in moisture curable polyurethane coating compositions (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Okuhira's method by substituting Merger's aldehydes into Okuhira's reaction to provide the presently claimed aldiminoalkylsilanes. One would have been motivated to make this modification as one of ordinary skill in the art at the time of the invention could have substituted Merger's aldehydes for those of Okuhira with a reasonable expectation of success (as they would be expected to react identically to form ketoimines with the

aminoalkylsilanes), and the predictable result of providing an aldiminoalkylsilane additive for moisture curable coating compositions.

II. Regarding claim 16, Okuhira teaches all the limitations of claim 14, but fails to teach the aminoalkylsilane being present in a mixture of at least one polyamine having primary aliphatic amino groups and the aldehyde groups employed stoichiometrically or in excess of the entirety of the primary amino groups, thereby producing a mixture after reaction. However, Merger teaches that aldehydes of formula II (see top of column 9) can be utilized in reactions with polyamines having primary aliphatic amino groups (see Table 1, columns 15 and 16) to prepare polyaldimines for use in moisture curable coating compositions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Okuhira's method by adding polyamines having primary aliphatic amino groups and adding excess aldehyde to react with these additional polyamines to provide a mixture of aldiminoalkylsilane and polyaldimines. One would have been motivated to make this modification as one of ordinary skill in the art at the time of the invention could have added additional polyamines and reacted them with the aldehyde to prepare a mixture with a reasonable expectation of success (given that the reaction of the aldehyde with the aminoalkylsilane and the polyamine will be identical), and the predictable result of providing a mixture of aldiminoalkylsilane and polyaldimines both of which would be expected to provide beneficial advantages in moisture curable coating compositions.

5. Claims 7, 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuhira in view of Aoki et al. (U.S. Pat. No. 5010161).

I. Regarding claims 7 and 8, Okuhira teaches the preparation of aldiminoalkylsilanes by the reaction of aminoalkylsilanes as defined in claim 1 (see above) for use in a moisture curable coating composition (abstract), but fail to teach aldiminoalkylsilanes prepared by the reaction of those aminoalkylsilanes with the aldehydes defined by claims 7 and 8. However, Aoki teaches a process for preparing polyaldimines by reaction of primary amines with aldehydes (abstract) having the formula as is delineated in claims 7 and 8 (see Formula IV, column 5 and column 3, lines 32-38) for application in moisture curable polyurethane coating compositions (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Okuhira's method by substituting Aoki's aldehydes into Okuhira's reaction to provide the presently claimed aldiminoalkylsilanes. One would have been motivated to make this modification as Aoki teaches that their compositions exhibit good storage stability (abstract). Furthermore, one of ordinary skill in the art at the time of the invention could have substituted Aoki's aldehydes for those of Okuhira with a reasonable expectation of success (as they would be expected to react identically to form ketoimines with the aminoalkylsilanes), and the predictable result of providing an aldiminoalkylsilane additive for moisture curable coating compositions.

II. Regarding claims 10-12, Okuhira in view of Aoki teach all the limitations of claim 7 (see above), but fail to the method of preparation of the aldehyde. However, these are product-by-process claims, and even though product-by-process claims are limited by and defined by the

process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case the product is obvious over the combination of Okuhira in view of Aoki as disclosed above, and therefore claims 10-12 are also obvious over Okuhira in view of Aoki.

Conclusion

Claims 1-32 are pending.

Claims 1-16 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792

/ROBERT S. WALTERS JR/
June 5, 2009
Examiner, Art Unit 1792